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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,486

12/11/2003

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588.1005

7690

23280 7590 11/25/2008
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EXAMINER

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ART UNIT

PAPER NUMBER

3657

MAIL DATE

DELIVERY MODE

11/25/2008

PAPER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/733,486
Filing Date: December 11, 2003
Appellant(s): NIESSEN, WOLFGANG

William C. Gehris
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 01/22/2008 appealing from the Office
action mailed 12/26/2006

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,020,645	Sasa	6-1991
6,609,994	Muramoto	8-2003
7,035,727	De La Salle	4-2006

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1,3-5,8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasa in view of Muramoto (U. S..Patent no. 6,609,994).

Sasa discloses:

Sasa discloses a clutch 2, clutch actuator 21, transmission input speed sensor 33, brake pedal sensor 42, engine speed sensor 13, power adjustment actuator 11, and controller 5.

See figure 5 for control of creep. Clutch position is linearly varied with brake actuation and adjusted by corrective factors in order to determine vehicle speed.. Regarding claims 1 and 16, Sasa does not specifically disclose a speed setpoint. Sasa is controlling the clutch engagement to target a specific speed by adjusting for different conditions like load and gradient (e.g. Column 9 lines 2-11). Sasa even allows for the driver to adjust the creep relative to the brake position through device 9. Sasa is

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targeting a particular speed implicitly rather than explicitly. Muramoto teaches targeting a specific speed based on brake pedal position (see figure 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a target speed (setpoint) as taught by Muramoto in the system of Sasa rather than an implicit target as such is merely a control design. The effect of the two systems is the same as clutch engagement needs to be controlled in order to achieve a speed setpoint. Obtaining a set speed is clearly the object of Sasa or device 9 would not exist.

Regarding claims 3-5, Sasa does not disclose the specific method of detecting brake actuation (force, position, or pressure). All the claimed methods are well known and It would have been obvious to one of ordinary skill in the art at the time the invention was made to use force, position, or pressure to determine the brake actuation based on factors like cost and reliability and redundancy with other systems like ABS and TCS.

Claims 1,3-5,8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasa in view of De La Salle et al (U. S. Patent no. 7,035,727).

Sasa discloses:

Sasa discloses a clutch 2, clutch actuator 21, transmission input speed sensor 33, brake pedal sensor 42, engine speed sensor 13, power adjustment actuator 11, and controller 5.

See figure 5 for control of creep. Clutch position is linearly varied with brake actuation and adjusted by corrective factors in order to determine vehicle speed.

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Regarding claims 1 and 16, Sasa does not specifically disclose a speed setpoint. Sasa is controlling the clutch engagement to target a specific speed by adjusting for different conditions like load and gradient (e.g. Column 9 lines 2-11). Sasa even allows for the driver to adjust the creep relative to the brake position through device 9. Sasa is targeting a particular Speed implicitly rather than explicitly. De La Salle et al teaches targeting a specific speed based on brake pedal position (see figure 2b). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a target speed (setpoint) as taught by De La Salle et al in the system of Sasa rather than an implicit target as such is merely a control design. The effect of the two systems is the same as clutch engagement needs to be controlled in order to achieve a Speed setpoint. Obtaining a set speed is clearly the object of Sasa or device 9 would not exist. Regarding claims 3-5, Sasa does not disclose the specific method of detecting brake actuation (force, position, or pressure). All the claimed methods are well known and It would have been obvious to one of ordinary skill in the art at the time the invention was made to use force, position, or pressure to determine the brake actuation based on factors like cost and reliability and redundancy with other systems like ABS and TCS.

(10) Response to Argument

a. Claims 1, 3-5 and 8-17 are unpatentable over Sasa in view of Muramoto because the combination of Sasa and Muramoto teaches each and every element of the claims.

Claims 1, 11 and 16 under Sasa in view of Muramoto.

Independent claims 1, 11 and 16 disclose a method for controlling creep behavior of a vehicle equipped with an automated clutch (for example, clutch 4 in Figure 2; for example, page 3, paragraph 14, lines 1 to 2), comprising: detecting actuation of a brake actuating element (for example, brake pedal 34 in Figure 2; for example, page 2, paragraph 7, line 4 to 6 and page 4, paragraph 14, lines 1 to 5), a creep parameter (for example, creep parameter KP in Figure 1; for example, page 6, paragraph 21, line 1) influencing a creep of the vehicle (for example, page 6, paragraph 23, lines 1 to 2), an actuating position of the automated clutch being a function of the creep parameter (for example, page 7, paragraph 27, lines 1 to 9), and controlling the creep parameter (for example, KP in Fig. 1) using a vehicle speed setpoint so that when the brake actuating element is increasingly actuated, the vehicle speed is reduced (for example, page 6, paragraph 23, lines 1 to 5).

As seen in figures 1-5 of Patent Document US 5,020,645, Sasa discloses an automated clutch (for example, clutch 2 in Figure 1; for example, col. 2, lines 51 to 53), comprising: detecting actuation of a brake actuating element (for example, brake pedal where the brake pedal sensor 42 is attached in Figure 1; for example, col. 3, lines 4 to 7), a creep parameter (for example, creep adjusting device in Figure 1; for example, col. 3, lines 39 to 48) influencing a creep of the vehicle (for example, col. 3, lines 39 to 48; col. 4, lines 26 to 31; col. 5, line 66 to col. 6, line 8), an actuating position of the automated clutch being a function of the creep parameter (for example, a clutch actuator 21 and power adjustment actuator 11 in figure 1; for example, col. 2, lines 53 to

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60; col. 3, lines 39 to 48), and controlling the creep parameter (for example, illustrates maps in figures. 4(h) to 4(j) and 5; for example, col. 7, lines 1 to 11). Sasa does not set or have any "vehicle speed setpoint" as claimed, but Sasa is controlling the clutch engagement to target a specific speed by adjusting for different conditions like load and gradient (e.g. Column 9 lines 2-11). Sasa even allows for the driver to adjust the creep relative to the brake position through device 9. Sasa is targeting a particular speed implicitly rather than explicitly. Muramoto teaches targeting a specific speed based on brake pedal position (see figure 3; see also (S6) and (S18) in figure 2).

Appellant argues that because Muramoto controls the vehicle creep using the engine and not the clutch, it would not have been obvious to provide the device of Sasa with such a vehicle speed setpoint as asserted in Muramoto. The examiner respectfully submits that Muramoto discloses a braking device / driving control apparatus for an automotive vehicle to control the vehicle creep using not only the engine (see figure 1, (65)), but also the brake (see figure 1, (75)) and the CVT/transmission (see figure 1, (85)). The examiner likes to note that Sasa discloses a gear ratio control such as a transmission with clutch system where Muramoto discloses a gear ration control such as a CVT, wherein Muramoto targets and sets a vehicle speed setpoint based on the transmission gear ratio. Therefore, it is clear and obvious to use such teaching of target speed (setpoint) by Muramoto in the system of Sasa rather than an implicit target as such is merely a control design. The effect of the two systems is the same as clutch engagement needs to be controlled in order to achieve a speed setpoint.

Appellant further argues that Sasa does not teach or show complete closing of the clutch when there is no brake activity (see page 8, paragraph 2 and page 9, paragraph 5 of the appeal brief). The examiner must argue that such limitations are not disclosed in either claim 1, 11 or claim 16. Thus the rejection to claims 1, 11 and 16 is valid and proper.

Claim 14 under Sasa in view of Muramoto.

Claim 14 recites "wherein the speed of the vehicle is determined using a sensor sensing a rotational speed of an input shaft to a transmission, the sensor being downstream of the clutch."

Appellant argues that there is no such step or disclosure in Sasa. The examiner respectfully submits that the combination of Sasa and Muramoto teaches each and every element of the claim. The examiner must argue that Sasa clearly discloses an input shaft rotation sensor (see figure 1, sensor 33) for sensing the rotational speed of the input shaft of the transmission 3 (please see col. 2, lines 64-66; see also figure 2(c) of Sasa). Thus the rejection to claim 14 is valid and proper.

Claim 15 under Sasa in view of Muramoto.

Claim 15 recites "wherein the speed of the vehicle is determined using the transmission ratio."

Appellant argues that there is no such disclosure in Sasa. The examiner respectfully submits that the combination of Sasa and Muramoto teaches each and

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every element of the claim. The examiner must argue that Sasa clearly discloses maps showing the determination of the vehicle traveling velocity based on different readings of the vehicle condition such as the amount of brake pedal depression, engine rpm, rpm of the rotational input shaft of the transmission and the amount of clutch engagement at each gear speed of the transmission (please see col. 3, line 59 to col. 4, line 44). Thus the rejection to claim 15 is valid and proper.

b. Claims 1, 3-5 and 8-17 are unpatentable over Sasa in view of De La Salle et al. because the combination of Sasa and De La Salle et al. teaches each and every element of the claims.

Claim 1, 11 and 16 under Sasa in view of De La Salle et al.

Independent claims 1, 11 and 16 discloses a method for controlling creep behavior of a vehicle equipped with an automated clutch (for example, clutch 4 in Figure 2; for example, page 3, paragraph 14, lines 1 to 2), comprising: detecting actuation of a brake actuating element (for example, brake pedal 34 in Figure 2; for example, page 2, paragraph 7, line 4 to 6 and page 4, paragraph 14, lines 1 to 5), a creep parameter (for example, creep parameter KP in Figure 1; for example, page 6, paragraph 21, line 1) influencing a creep of the vehicle (for example, page 6, paragraph 23, lines 1 to 2), an actuating position of the automated clutch being a function of the creep parameter (for example, page 7, paragraph 27, lines 1 to 9), and controlling the creep parameter (for example, KP in Fig. 1) using a vehicle speed setpoint so that when the brake actuating

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element is increasingly actuated, the vehicle speed is reduced (for example, page 6, paragraph 23, lines 1 to 5).

As seen in figures 1-5 of Patent Document US 5,020,645, Sasa discloses an automated clutch (for example, clutch 2 in Figure 1; for example, col. 2, lines 51 to 53), comprising: detecting actuation of a brake actuating element (for example, brake pedal where the brake pedal sensor 42 is attached in Figure 1; for example, col. 3, lines 4 to 7), a creep parameter (for example, creep adjusting device in Figure 1; for example, col. 3, lines 39 to 48) influencing a creep of the vehicle (for example, col. 3, lines 39 to 48; col. 4, lines 26 to 31; col. 5, line 66 to col. 6, line 8), an actuating position of the automated clutch being a function of the creep parameter (for example, a clutch actuator 21 and power adjustment actuator 11 in figure 1; for example, col. 2, lines 53 to 60; col. 3, lines 39 to 48), and controlling the creep parameter (for example, illustrates maps in figures. 4(h) to 4(j) and 5; for example, col. 7, lines 1 to 11). Sasa does not set or have any "vehicle speed setpoint" as claimed, but Sasa is controlling the clutch engagement to target a specific speed by adjusting for different conditions like load and gradient (e.g. Column 9 lines 2-11). Sasa even allows for the driver to adjust the creep relative to the brake position through device 9. Sasa is targeting a particular speed implicitly rather than explicitly. De La Salle et al teaches targeting a specific speed based on brake pedal position (see figure 2b).

Appellant argues that because De La Salle et al teaches away from using the clutch by using the engine and transmission to control the vehicle creep and it would not have been obvious to provide the device of Sasa with such a vehicle speed setpoint as

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asserted in De La Salle et al. The examiner respectfully submits that De La Salle et al discloses a braking device / driving control apparatus for an automotive vehicle to control the vehicle creep using not only the engine (see figure 1, (65)), but also the brake (see figure 1, (75)) and the CVT/transmission (see figure 1, (85)). The examiner likes to note that Sasa discloses a gear ratio control such as a transmission with clutch system where De La Salle et al discloses a gear ration control either a manual transmission including a clutch mechanism or an automatic transmission including a torque converter (please see col. 3, lines 31 to 34), wherein De La Salle et al targets and sets a vehicle speed setpoint based on the transmission gear ratio (see figures 2B, 3, 4 and 5B). Therefore, it is clear and obvious to use such teaching of target speed (setpoint) by De La Salle et al in the system of Sasa rather than an implicit target as such is merely a control design. The effect of the two systems is the same as clutch engagement needs to be controlled in order to achieve a speed setpoint.

Appellant further argues that Sasa does not teach or show complete closing of the clutch when there is no brake activity (see page 14, paragraph 2 and page 15, paragraph 5 of the appeal brief). The examiner must argue that such limitations are not disclosed in either claim 1, 11 or claim 16. Thus the rejection to claims 1, 11 and 16 is valid and proper.

Claim 12 under Sasa in view of De La Salle et al.

Claim 12 recites “wherein the speed of the vehicle is controlled so as to vary linearly with actuation of the brake element.”

Appellant argues that Sasa provides no such disclosure. The examiner respectfully submits that the combination of Sasa and De La Salle et al teaches each and every element of the claim. The examiner must argue that De La Salle et al discloses such limitations as claimed (please see figure 2B; see also col. 5, line 54 to col. 6, line 13). Thus the rejection to claim 12 is valid and proper.

Claim 13 under Sasa in view of De La Salle et al.

Claim 13 recites "wherein the speed of the vehicle is controlled so that the speed of the vehicle equals $(B_{MAX}-B/B_{MAX}) \cdot V_{MAX}$ for $B < B_{MAX}$ and zero for $B > B_{MAX}$, where B is the brake actuation, B_{MAX} is a maximum creep brake actuation, and V_{MAX} is the maximum vehicle creep when the brake is not actuated."

Appellant argues that no such speed control is disclosed in Sasa, nor have the limitations of N_{MAX} and V_{MAX} been addressed by the Office Action. The examiner respectfully submits that the combination of Sasa and De La Salle et al teaches each and every element of the claim. The examiner likes to note that the disclosed limitations is just another way saying that the speed of the vehicle is controlled so as to vary linearly with actuation of the brake element as already disclosed in claim 12. The examiner must argue that De La Salle et al discloses such limitations as claimed (please see V_{MAX} (maximum creep) in figure 2B; see also col. 5, line 54 to col. 6, line 13). The examiner further notes that there is a typographical error of " N_{MAX} " (see page 16, paragraph 4 of the appeal brief) and it is not clear what the appellant is referring it to. Thus the rejection to claim 12 is valid and proper.

Claim 14 under Sasa in view of De La Salle et al.

Claim 14 recites "wherein the speed of the vehicle is determined using a sensor sensing a rotational speed of an input shaft to a transmission, the sensor being downstream of the clutch."

Appellant argues that there is no such step or disclosure in Sasa. The examiner respectfully submits that the combination of Sasa and De La Salle et al teaches each and every element of the claim. The examiner must argue that Sasa clearly discloses an input shaft rotation sensor (see figure 1, sensor 33) for sensing the rotational speed of the input shaft of the transmission 3 (please see col. 2, lines 64-66; see also figure 2(c) of Sasa). Thus the rejection to claim 14 is valid and proper.

Claim 15 under Sasa in view of De La Salle et al.

Claim 15 recites "wherein the speed of the vehicle is determined using the transmission ratio."

Appellant argues that there is no such disclosure in Sasa. The examiner respectfully submits that the combination of Sasa and De La Salle et al teaches each and every element of the claim. The examiner must argue that Sasa clearly discloses maps showing the determination of the vehicle traveling velocity based on different readings of the vehicle condition such as the amount of brake pedal depression, engine rpm, rpm of the rotational input shaft of the transmission and the amount of clutch

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engagement at each gear speed of the transmission (please see col. 3, line 59 to col. 4, line 44).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Mahbubur Rashid /M. R./

Examiner, Art Unit 3657

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